



U.S. General Services Administration

GSA Fleet Sustainability Solutions

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GSA Fleet Value Proposition



Right Vehicle



Right Price



Great Service

and the data required to effectively and efficiently manage a fleet.

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Agenda

- Sustainability Overview
- Electric Vehicles (EV)
 - EV Deployment Initiative Update
 - EV Performance in Federal Fleet
 - Future Trends
- Other Alternative Fuel Vehicle (AFV) Options
 - Low GHG Options for Light Trucks
 - Federal Fleet Idling Mitigation Solutions
 - Future Trends
- AFV Acquisition Tools/Resources

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Sustainability and the Federal Fleet

- Sustainability can be a means for improving efficiency, strengthening energy security, and lowering long-term fleet costs
- Federal laws support continued sustainability in federal fleets:

Law / Mandate	Sustainability Measure
Energy Policy Act (EPAAct) 1992/2005	75% passenger vehicle acquisitions to be AFVs in metropolitan statistical areas
Energy Independence and Security Act (EISA) 2007, Section 141	Light- and medium-duty vehicles to be low-GHG
Fixing America's Surface Transportation (FAST) Act	Federal employee workplace charging
Executive Order (E.O.) 13693	GHG reductions, zero emission vehicles, telematics, fleet optimization

Initiatives | Current Fleet | Trends

ELECTRIC VEHICLES



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FY17 EV Deployment Initiative

- Collaboration between GSA, DOE, and CEQ to help agencies overcome obstacles around implementing EVs in the federal fleet
 - Electric vehicle incremental payment options
 - Government-wide BPA for charging stations (coming soon)
 - Training and planning support



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FY17 EV Models



8E Ford Focus

Purchase
\$16,160.00

Lease
\$182/month, \$.063/mile

Incremental
\$1,515.00

B/E Rate
\$199/month, \$.063/mile
No Incremental



NEW! 8E GM Bolt BEV

Only available in ZEV states

Purchase
\$34,810.66

Lease
\$182/month, \$.063/mile

Incremental
\$20,165.66

Contact gsafleetafvteam@gsa.gov for leasing options

FY17 PHEV Models



Subcompact Sedans



**8P Chevrolet
Volt PHEV**

Purchase: \$30,300
Lease: \$182/month, \$.08/mile
Incremental: \$15,655.00

**8P Ford
CMAX Energi
PHEV**

Purchase: \$27,143.75
Lease: \$182/month, \$.08/mile
Incremental: \$12,498.75



Compact Sedans



**9P Ford Fusion
Energi PHEV**

Purchase: \$28,209.30
Lease: \$184/month, \$.10/mile
Incremental: \$9,838.41

**9P Hyundai
Sonata PHEV**

Purchase: \$27,961.85
Lease: \$184/month, \$.10/mile
Incremental: \$9,590.96



NEW! Minivan
20P Chrysler Pacifica PHEV

Purchase: \$38,458.78
Lease: \$237/month, \$.13/mile
Incremental: \$17,048.80

Contact gsafleetafvteam@gsa.gov for leasing options

Coming Soon!

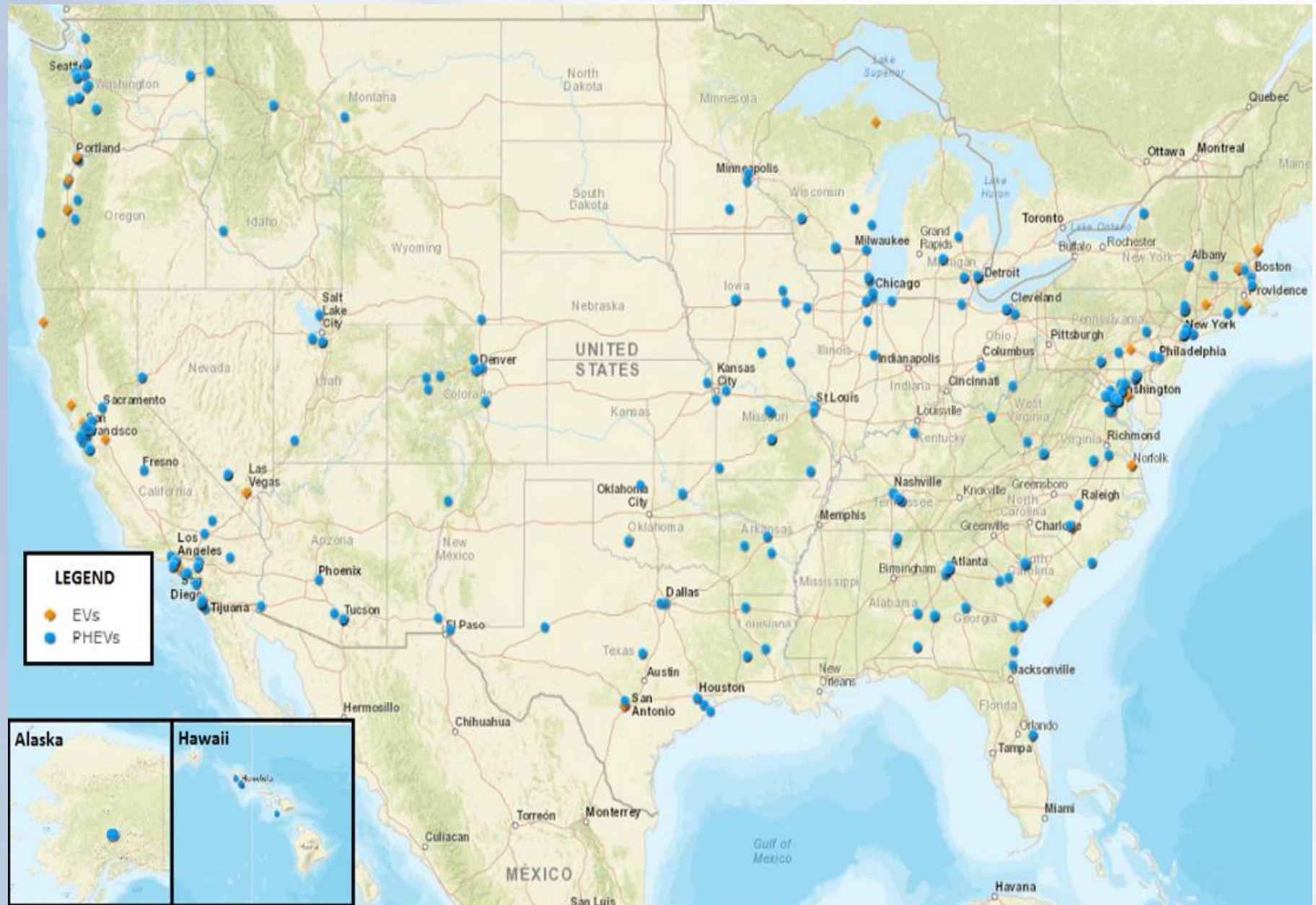
Charging Station BPA and Lease Option

- GSA released RFQ for government-wide BPA
 - Encompasses hardware, basic installation, data network connectivity
 - Vendor quotes received, currently undergoing review
- Leasing charging stations from GSA Fleet
 - Equipment only, no installation or maintenance
 - 48 month lease with 12 month option period
 - Equipment can be transferred to agency at end of lease
 - Contact gsafleetafvteam@gsa.gov to participate

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Electric Vehicles in the GSA Leased Fleet*



*Excludes low-speed electric vehicles (LSEVs)

Electric Vehicles in the Federal Fleet

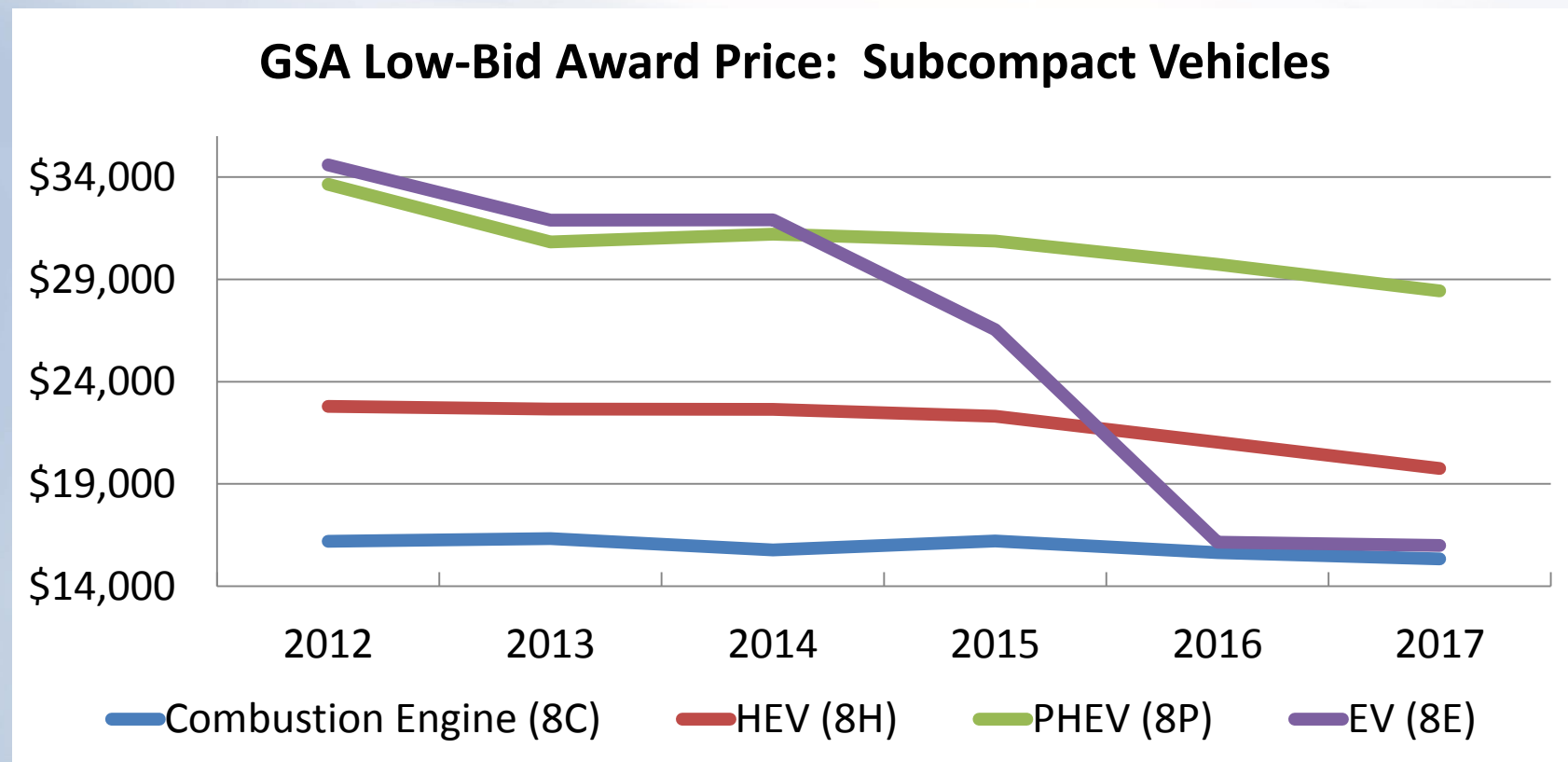
- Number of EVs leased through GSA continues to increase
 - 90 all-electric and 534 plug-in hybrid electric vehicles currently
- Annually saving the government:
 - \$29,606 in fuel savings
 - 8,404 gallons of fuel
 - 75.85 metric tons of GHG emissions annually
- Utilization remains a challenge... and an opportunity
 - 8E annual miles driven is 78% lower than conventional 8C
 - Data shows many PHEVs are not being charged consistently
 - Fuel reductions and cost savings can be even further realized with basic driver behavior changes

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Electric Vehicles in the Federal Fleet

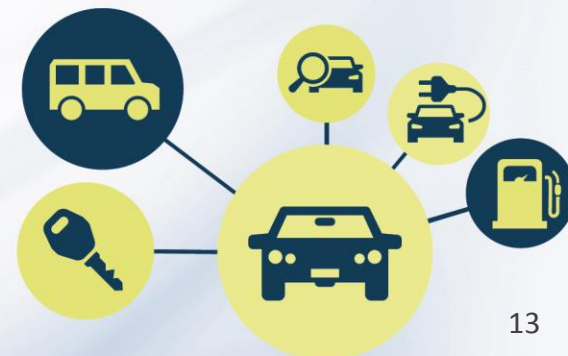
- Vehicle costs are going down
 - Batteries are more affordable
 - Technology is becoming more common



Hybrid Electric Vehicles in FY17

- Great alternative when plug-in hybrid electric vehicles (PHEV) are cost- or mission-prohibitive
- Similar fuel economy as PHEVs when operated on gas
- Costs are dropping significantly, improving payback on investment
- 9H is considered a best value vehicle in FY17
 - \$819.11 low-bid incremental pays for itself in fuel savings
 - 10 MPG improvement over 8C and 9C
 - No other AFV option in 9C models

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Future Trends in Electric Vehicles

- Less expensive vehicles, larger batteries, greater all-electric range, DC Fast Charging capability increasingly common, more vehicles with CHAdeMO connection
- One pedal driving
 - Apply pressure to the pedal to accelerate, let go to slow the car down as if you are braking
 - Helps to recapture and store additional energy, similar to regenerative braking
- Expansion to larger vehicle classes
- Growth of EV corridors across the U.S.



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Reducing Fuel Consumption and Emissions

ALTERNATIVE FUELS AND BEYOND



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Government-wide Purchases Through GSA

	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Total Vehicle Purchases	63,352	54,964	50,114	41,643	58,050	47,409	53,013
% AFV Purchases	67%	80%	75%	82%	81%	83%	83%
AFV Offerings	291	502	894	1,537	1,513	1,632	1,783
Improved MPG (leased vehicles)	24%	21%	15%	19%	21%	13%	14%

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Light Truck Fuel Economy

- Currently no low-GHG options in trucks
- Light trucks have:
 - Fewer AFV options
 - Low MPG
 - High GHG emissions
 - Higher fuel costs
- The MPG illusion
 - Small MPG improvements on inefficient vehicles can result in greater fuel savings than larger improvements on already efficient vehicles
 - Replace older vehicles with new models for biggest improvements



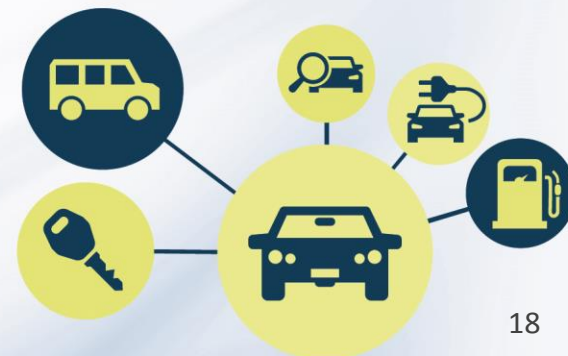
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Improving Light Truck Fuel Economy

- Limited options for improving fuel economy
- Target inefficient older trucks for replacement
- Three turbocharged engine options in FY17 improve MPG by as much as 17%
 - Ford F-150 - 2.7L EcoBoost (*Optional equipment code IE2*)
 - Ram 1500 - 3.0L Eco Diesel (*Optional equipment code YD*)
 - Chevy Colorado - 2.8L Turbo-Diesel (*Optional equipment code YD*)
- Turbocharged engine options range between \$700 and \$5,000
- Fleet-level analysis to determine cost-benefit

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Federal Fleet Idling

- Idling is a concern among all vehicle classes in the federal fleet
 - GSA analysis on sedans, vans, light trucks
- Idling vehicles cost the government money
 - Higher gasoline per mile fuel consumption
 - Increased per-mile preventative maintenance costs
- Curbing vehicle idling:
 - Modify driver behavior
 - Stop/Start engines becoming standard
 - Implement idle mitigation technology



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Idle Mitigation Technology Solutions

- Aftermarket solutions can power climate and auxiliary power systems without running the engine
- GSA released an RFI for light-, medium-, and heavy-duty vehicle solutions
 - Specifically looking for devices that do not void OEM warranties
- Encouraging vendors to add devices and installation to GSA Schedule 23V
- GSA Fleet plans to conduct a pilot to test devices



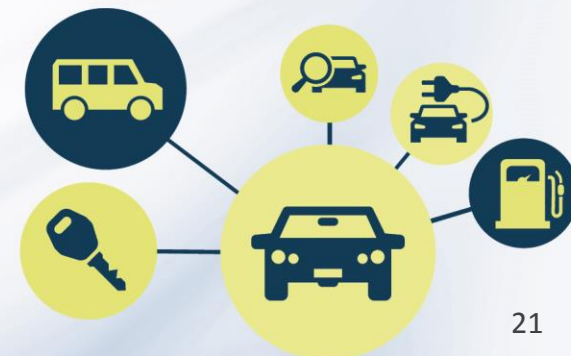
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Future Trends: AFVs and Beyond

- Rise of fuel cell stations (especially in CA) and available vehicle models
- Electric axle driving (e-axle)
 - Improves performance and all-weather driving while reducing fuel consumption over conventional four-wheel-drive systems
- Features to improve gasoline fuel economy:
 - Move from 12-volt electrical systems to 48-volt systems
 - Engine start-stop becoming standard feature
 - Greater focus on aerodynamics and lightweight materials
- Fewer E85 and CNG vehicle models
- Rise of car sharing in urban areas

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AFV Guide and Acquisition Tool

GSA RESOURCES AND TOOLS



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AFV Guide

- Annual AFV Guide
 - Listing of all AFV and low GHG configurations
 - Search by vehicle category, SIN, fuel type, EISA compliance & CARB/non-CARB state delivery
 - Includes summary of all current AFV laws/mandates for federal fleets
- Benefits
 - All AFV acquisition information in one organized file
- Located at gsa.gov/afv under “AFV Guides and Helpful Links”

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AFV Acquisition Tool

- FY17 AFV Acquisition Tool
 - Simplified and interactive AFV acquisition decision tool
 - Compare AFVs by SIN, fuel type, options, and location
 - Provides acquisition costs, lease costs, fuel efficiency, emissions data, and regulatory compliance information
 - Select and compare up to 3 vehicles at a time before making acquisition decision
- Benefits
 - Allows agencies to see financial and sustainability impacts of pursuing multiple AFV acquisition strategies
- Located at gsa.gov/afv under “AFV Guides and Helpful Links”

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AFV Acquisition Tool

Step 1.
Select
ALL FIVE
Vehicle

VEHICLE SELECTION PROCESS

1). Vehicle Type	2). VIN & Vehicle Description	3). Fuel Type	4). EISA Compliant	5). Delivery to CARB Emission State
Sedan	SIN_8C_Subcompact_4pass_4doors	GAS	Y	Y

Step 2.
Review
Vehicle
Information

VEHICLE INFORMATION OUTPUTS

Calculate Financial Implications	Note	Vehicle Make	Vehicle Model	Engine (Displacement and Cylinders)	Required Vehicle Options	Vehicle Purchase Price	Monthly Lease Rate	Mileage Lease Rate	Incremental (Leasing Only)
Calculate	Low GHG Model	RP AUTO	ELANTRA	2.0L, 4 cylinders	0	\$ 14,306.65	\$ 163.00	\$ 0.130	\$ -
Calculate	Low GHG Model	GM	CRUZE	1.4L Turbo, 4 cylinders	0	\$ 17,486.13	\$ 203.00	\$ 0.130	\$ -
Calculate	Low-GHG - CARB states only	FORD	FOCUS	2.0L, 4 cylinders	0	\$ 14,645.00	\$ 168.00	\$ 0.130	\$ -
Calculate	Low GHG Model	FORD	FOCUS	1.0L, 3 cylinders	DE1, SFE	\$ 15,467.14	\$ 179.00	\$ 0.130	\$ -

Vehicle Inputs (Required for Financial Implications)

Quantity	Est. Miles Driven (Per Vehicle)
3	10000

Step 3.

Select and Review
Financial Information

Save To Vehicle 1

Save To Vehicle 2

Save To Vehicle 3

Clear Values

Financial Implications

Vehicle Make & Model	GM_CRUZE
Acquisition Cost	\$ 52,458.39
First Year Lease Cost	\$ 11,208.00
Total Incremental	\$ -
Combined Flex Fuel MPG	N/A
Combined Conventional Fuel MPG	34
Flex Fuel GPM	N/A
Conventional Fuel GPM	265

Vehicle Scenarios

	RP AUTO_ELANTRA	GM_CRUZE	Vehicle 3
Total Vehicles	3	3	
Acquisition Cost	\$ 42,919.95	\$ 52,458.39	
First Year Lease Cost	\$ 9,768.00	\$ 11,208.00	
Total Incremental	\$ -	\$ -	
Combined Flex Fuel MPG	N/A	N/A	
Combined Conventional Fuel MPG	32	34	
Flex Fuel GPM	N/A	N/A	
Conventional Fuel GPM	282	265	

Clear Values

Clear Values

Clear Values

Hypothetical Leasing Information

Total Vehicles	6
Total First Year Lease Costs	\$ 20,976.00
Total Incremental	\$ -
Average Flex Fuel MPG	N/A
Average Conventional Fuel MPG	33
Average Flex Fuel GPM	N/A
Average Conventional Fuel GPM	273.5

Hypothetical
Acquisition
Analysis

Clear Hypothetical
Scenario

Hypothetical Purchase Information

Total Vehicles	6
Total Acquisition Costs	\$ 95,378.34
Average Flex Fuel MPG	N/A
Average Conventional Fuel MPG	33
Average Flex Fuel GPM	N/A
Average Conventional Fuel GPM	273.5

Purchase information shown is inclusive of only purchase price. Cost elements such as fuel, maintenance, depreciation and other indirect costs are not incorporated in purchase price analysis. These elements are however captured in total lease costs.

Additional Resources

- GSA Fleet Drive-thru (<https://drivethru.gsa.gov>)
 - Driver training and sustainability series
 - Fleet reports, guides, and tools
- The Acquisition Gateway (<http://hallways.cap.gsa.gov>)
 - Visit the Transportation and Logistics Services Hallway → Motor Vehicles Sub-Hallway
 - Vehicle factsheets
 - Charging station information
 - Links to related DOE pages and tools
- GSA Fleet Service Representative (FSR)
 - Support agencies with full spectrum of fleet management needs
 - Find your FSR by visiting <http://gsa.gov/fsr>

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Contact

Alternative Fuel Vehicle Team Inbox

gsafleetafvteam@gsa.gov

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